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DESCRIPTION OF A TSANTSA IN THE ETHNOLOGICAL COLLECTION OF THE
ACADEMY, WITH NOTES ON ANOTHER SPECIMEN.

BY H. NEWELL WARDLE.

The little mummified human heads, known by their native name of *tsantsa*, and made by the Jibaro tribes dwelling in the eastern Andean valleys around the head waters of the Amazon, have been known to science for half a century,¹ yet the specimens are still sufficiently rare for each to merit a full description.

The Academy has recently received a fine *tsantsa*, as a gift from Dr. Thomas Biddle (Plate VI). It was formerly in the possession of the Museum Umlauff of Hamburg, and bears the tag of that institution with the inscription,

"h No.	No. 826
23182	Equador
	Jivaros."

The head is in fine condition, the flesh being firm and hard, though apparently not brittle.

The skin is devoid of wrinkles, despite the excessive shrinkage it has undergone. It shows that peculiar chocolate-brown tone characteristic of the *tsantsa*, the portions in relief, such as lips, nostrils, and zygoma, being highly polished and lighter in color, with a distinctly reddish tinge. There are no traces of tattooing observable.

The measurements follow:

	m.
Horizontal circumference.....	.240
Transverse supra-auricular curve.....	.154
Maximum antero-post. diameter (inion-glabella).....	.093
Maximum occipito-labial diameter.....	.115
Maximum transverse diameter.....	.048
Total length of face.....	.080
Maximum bizygomatic diameter.....	.037

The above measurements show that the Academy's specimen

¹ Dr. Moreno-Maiz, Tête d'Indien jivaro (Pérou oriental) conservée et momifiée par un procédé particulier, avec quelques renseignements sur les Jivaros. *Bulletins de la Société d'anthropologie de Paris*, t. III, p. 185, 1862.

possesses the characteristic, narrow, elongated form, with strongly marked prognathism and considerable asymmetry.

Behind the temples is the usual deep depression, which, especially on the right side, almost amounts to a breaking in of the surface, and gives to the forehead a somewhat conical form. The whole facial region also is narrow and flattened laterally. The cheeks, while not sunken, are depressed below the level of the zygomatic arch and of the muscles of the mouth.

The eyebrows are apparently asymmetrical in the arrangement of the hairs—the right supercilium having its inner corner close to the glabella, while that of the left is well round toward the side. The head would seem to have suffered loss at these points during the process of preparation. The hairs are comparatively short—4 to 5 mm. in length. Considering the great contraction of the piliferous tissue, the growth is not heavy. No eyelashes are visible.

The eyelids have been inverted and stitched together, the stitches from the right eye being continued to close a gash on the right surface of the root of the nose. The line of the crack is traceable across the root of the nose to a corresponding break on the left side which is not sewed. This is found in other tsantsas and doubtless results from the method of preparation which forces the nose forward and upward.

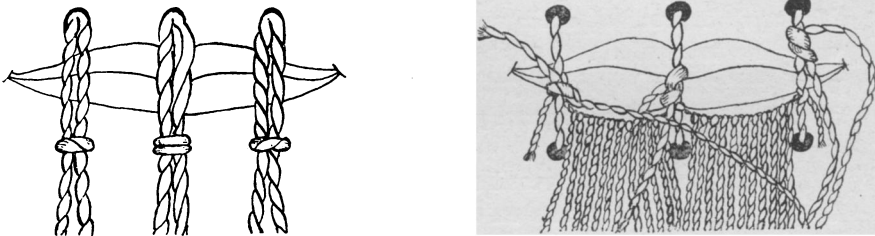
The naso-buccal region is strongly projected, which, together with the slightly receding chin, gives to the lower face a snout-like aspect.

The nostrils, which are rudely circular and distended, are directed almost straight to the front, in a manner suggestive of a double-barreled gun. The orifices show a sufficient supply of vibrissæ. The septum has been broken away in the interior of the nasal passage, which extends straight backward into the cavity of the head. The contour of the nose shows a moderate convexity between root and tip.

The lips are proportionately heavy and are pressed forward in a horizontal curve and held together by three vertical stitches of vegetable cord. The holes through which these cords pass are circular, as if made with an awl, or kept open during the shrinkage process by round skewers, such as appear on the Murato tsantsa of Colini,² which apparently was in process of preparation when collected. The lip decoration of pendant cords attains a length of

² Dr. G. A. Colini, Osservazioni etnografiche sui Givari. *Real Accademia dei Lincei*, anno cclxxx, 1882-1883. *Memorie della Classe di scienze morali, storiche, e filologiche*, vol. XI, tav. 1, fig. 1.

30 centimeters. It is composed of three two-strand cords in the natural color, which, doubled in the middle, is passed downward through one of the piercings, whereupon its projecting loop is traversed by the free ends after crossing the lips. This is the simplest form of loop knot. The three cords form individual entities at the lips, and, unlike the labial ornaments figured by Dr. Rivet,³ there are no connecting loops with pendant cords. Twenty-one and a half centimetres below the lips, one of the ends of the left-hand cord has been broken off. All the remaining strands are gathered together at a point 30 cm. below the lips and, treated as a single strand, tied in a simple knot. Below this they resume their individuality. Both ends of the central cord and the remaining end of that on the left are formed into a kind of uncut tassel by turning back the ends and tying them in a single knot. The other three cord-ends were possibly united by a similar knot, though at present one of the strands is looped back and knotted upon itself. These cords are generally believed to be more than mere decoration, having a mnemonic value, after the manner of the Peruvian quipu (fig. 1).



Cords of the lip decoration: Fig. 1. The Academy's tsantsa; Fig. 2. The Castner tsantsa.

The chin is rounded and slightly receding, though the latter appearance is considerably enhanced by the artificial protraction of the lips. Two incisions have been made in it—one on the left side extending almost vertically downward and following the curve from the edge of the lower lip to a point corresponding to the gnathion or slightly posterior to it, the other extending forward from the severed edge of the neck to a point below the right angle of the mouth, where the gash turns upward. These cuts were doubtless made to facilitate the extraction of the lower maxillary bone and were then sewed up with twisted fibre. In the lower seam, the stitches remain in place, but those of the downward incision, with

³ Dr. Rivet, *Les Indiens Jibaro; etude géographique, historique et ethnographique*, *L'Anthropologie*, t. XIX, p. 79.

the exception of a single stitch, have evidently been cut away from the surface, leaving two parallel rows of stub ends of fibre visible on the opposite sides of the crack.

The ears, though reduced to a length of 3 cm., are apparently in nowise distorted. The lobule of each is pierced with a round hole, through which passes the soft cord of two twisted strands, which ties on the pendant ear ornament. These are of unequal length, that of the right ear being only 22 cm., while the left one measures 42 cm. from its fibre proximal end to the tip of the hair tuft in which it terminates. These cylindrical ear ornaments are formed of a heavy rope of twisted fibre, coarser and more woody than the cords through the ears and lips, and tightly bound with fibre at both ends. To the distal end has been attached, partly by gumming and partly by fibre wrapping, first a heavy tuft of hair, apparently human, 10 cm. long on the longer, and 5 cm. on the shorter pendant. Above this, with more gum and more encircling strands, was laid a circle of small yellowish-green feathers, 4 cm. long. Above these come the overlapping, iridescent scales which have entirely covered the foundation and consist of the green elytra of a tropic beetle, *Mallaspis antennatus*, each sewed by a single horizontal stitch of very fine twisted fibre, passing through the two perforations in its proximal end. Occasionally there is but one perforation, but even in that case the stitch is usually horizontal, passing over the opposite edge.⁴

The head has been severed at a point level with the lower line of the chin. The orifice has an oval form, being compressed laterally, in conformity with the whole head. At the section, the thickness of the flesh varies from 3 mm. to 9 mm.

By ordinary day light, the hair is of an ebony-black, but in sun light shows considerable iridescence with a marked reddish cast in the shorter hair of the fore part of the head. In character, it is moderately fine, wavy, and rather stiff. Much of it, upon the top and sides of the head, is short; the longest at the back reaches a length of 40 cm. Probably much has been removed for the scalp-belt—a trophy the Jibaro esteems only second to the tsantsa.

The scalp is seamed from what was, before distorting in desiccation, the posterior median line of the neck to a point midway to the vertex.

At the crown of the head, there is a single circular perforation,

⁴ Dr. Colini (*opera citu*, tav. II, figs. 10 and 10 bis) figures ear pendants of this type and ascribes them to the Muratos, a division of the Jibaros.

through which passes the doubled suspension cord. The free ends of this cord are knotted within the head around a small stick laid in anterior-posterior position beneath the vertex. Some 8 cm. above the point of issuance, the doubled cord is drawn into an incomplete knot, *i.e.*, the end is not pulled through, but doubled back upon itself. A centimeter farther and the doubled cord is again knotted. From this point it continues without further interruption, 335 mm., the loop thus formed of 671 mm. being of sufficient size to permit of passage over the head of the former Jibaro owner, when the *tsantsa* was worn suspended around the neck.

This suspension cord is not twisted, but woven, or rather plaited, with a fairly uniform width of 4 mm. The cut end within the head shows ten strands, and the technique is unquestionably that of the five-loop plaiting described by Dr. Roth.⁵ It possesses the attractive arrangement of strands and the flat under-surface, with slightly convex upper face characteristic of this peculiar process, and a series of experiments in ten-strand cord plaiting failed to reproduce it exactly, until the Warrau five-loop plaiting was tried. The result was more than satisfactory, for rather rapid work with this method gave all the peculiarities seen in the Jibaro cord—the occasional overlapping of one of the strands of the loop by its mate, thus concealing the lower, the consequent thickening and narrowing of the cord with the obscuring of the pattern—points which do not appear in Dr. Roth's beautifully regular drawing. It is of interest to note the occurrence of this technique—which would seem to be unrecorded elsewhere—in two such widely separated localities as the Amazonian slopes of the Andes in Ecuador and the Pomeroon District of British Guiana; employed, in the one case, by the Jibaros, a tribal group of as yet undetermined affinities,⁶ and, in the other, by the Warraus, whose relationships also remain to be fixed; and the question arises as to whether this five-loop plait is made also by the people of the far-flung Carib stock.

While engaged in the study of the Academy's *tsantsa*, another of these little mummified heads came under the writer's notice, and it was deemed advisable to include a brief description of it (Plate

⁵ Dr. Walter E. Roth, Some Technological Notes from the Pomeroon District, British Guiana. *Journal of the R. Anthropological Institute of Great Britain and Ireland*, vol. XL, p. 27, Plate VI, figs. 1-5.

⁶ Dr. Rivet, *Journ. citu*, t. XVIII, p. 338, footnote, promises a detailed study of the language of the Jibaros, based on vocabularies in his possession. Previously available evidence of its affinities was not sufficient to permit of assigning the tribal group to any stock.

VII, *a* and *b*). This trophy is owned by Mr. Samuel Castner, Jr., of Philadelphia, and was obtained by him in 1903 at a sale of the collection of Arthur H. Little, where it was wrongly ascribed to *Oceanica*. It is a typical Jibaro *tsantsa*, in excellent condition.

The skin is of the same chocolate-brown color, but without the lighter tones which distinguish the prominences in the one already described. It is smooth and shows no traces of tattooing.

The measurements follow:

	m.
Horizontal circumference.....	.260
Transverse supra-auricular curve.....	.160
Maximum antero-post. diameter (inion-glabella).....	.087
Maximum occipito-labial diameter.....	.105
Maximum transverse diameter.....	.060
Total length of face.....	.075
Maximum bi-zygomatic diameter.....	.045

Comparing the two specimens, it is evident that the gain in both the horizontal circumference and in the transverse supra-auricular curve, of the Castner piece, is due to the greater width of the head, both the longitudinal diameters being actually shorter. The face also is broader and shorter, with very slight prognathism.

The head is not noticeably asymmetrical and possesses the characteristic deep depressions behind the temples. The cheeks are rounded out, so that the muscles of the mouth and the position of the zygomatic arch are not brought into relief.

The eyebrows are symmetrical and fairly heavy, with individual hairs reaching a length of 10 mm. No eyelashes are visible, the eyelids being inverted but not stitched.

There is no break across the root of the nose, but a deep crease, due to the protraction of the bucco-nasal region. The nasal contour is marked by a moderate curve from tip to root. The nostrils are directed horizontally forward and show numerous vibrissæ. Neither septum nor allæ have been perforated.

The lips, which are proportionately heavy, show three vertical piercings, each occupied by a short twisted cord which traverses both lips and is knotted in front, leaving short pendant ends. To these cords, just above the point of issuance from the perforation in the lower lip, a horizontal cord is attached, which, in turn, bears the characteristic lip decoration of long, pendant cords—twenty-two in number and separated into two groups by the knotting of the horizontal sustainer around the central vertical cord. The long twisted cords of both groups fall straight to a length of m. .367 (fig. 2).

The chin is rounded, but not receding; it falls into a vertical line with the lower forehead. No incisions are visible, only a deep furrow from the neck to behind the position of the maxilla on the left side. In this, as in other details, the Castner tsantsa shows the work of a more skilful preparator than was the Jibaro from whose hand the Academy's specimen came.

The ears are considerably distorted so that an accurate measurement is not possible. Both have been pierced through the lobule, though the right one alone bears an ornament—a section of bird (?) bone, hung by a doubled cord of twisted fibre drawn through it, the knotted loop end being pulled back within the hollow bone.

The head has been severed by a diagonal cut, which passed close to the head on the right, but left a portion of the neck on the left side. The flesh at the section varies from 4 to 2 mm. in thickness.

The hair is of a beautiful ebony-black, fine and wavy, and reaches a length of 56 cm. The seaming of the scalp extends from the neck in the posterior median line almost to the vertex, where the single perforation occurs through which the suspension cord is passed. This latter has a length of only 50 cm. from the point of issuance from the perforation to its re-entry therein. The width of the cord is 3 mm., and the technique is evidently the same five-loop plaiting noted in the suspension cord of the Academy's tsantsa.

Comparison with the table of measurements of the eleven mummied heads studied by Dr. Rivet,⁷ shows that in both the tsantsas here described the horizontal circumference, the transverse supra-auricular curve, and the maximum antero-posterior diameter rise above the average, though not reaching the maximum measurements. In maximum transverse diameter, the Academy's piece falls within 3 mm. of the minimum, while the Castner head is above the average; in total height of face, the Academy's approaches the maximum, with a bi-zygomatic diameter below the minimum, while the height of the Castner specimen is below the minimum and its width at the zygoma somewhat below the mean.

Reference should be made to the preparation of these trophy heads, because of its relation to the structure and condition of the finished product. Three methods have been described by reliable travellers, and it is probable that all are, in the main, correct, the differences being due to local variation of practice among the Jibaro tribes.

⁷ Dr. Rivet, *Journ. citu*, t. XIX, p. 76.

Dr. Rivet,⁸ following Lubbock and other writers, gives the following procedure. After the extraction of the cranium through the posterior incision, the skin with adherent flesh is boiled in an herb decoction. Withdrawn from this, it is placed around a spherical stone, superheated, and, after shrinkage, upon a smaller stone, and then upon a third yet smaller. Meanwhile, another hot stone is passed back and forth over the surface, thus facilitating the shrinking and drying of the tissue. The lips, and sometimes the eyelids also, had previously been carefully sewed to prevent the retraction in desiccation, causing them to gape.

According to the engineer Von Hassel,⁹ after the substitution of the hot stone for the cranium, the head is hung in the smoke of a palm-root fire, but there is no mention of boiling. The lips are "deformed—by means of a cord and a little piece of chonta" (wood).

The third description of the method pursued, which was given Lieut. Safford by Señor Tirado¹⁰—an eye-witness—is an interesting blending of the two preceding. According to this statement, immediately after the extraction of the skull, the scalp is sewed up, and the hole in the vertex pierced and supplied with its cord. Afterwards the head is dipped in the hot infusion of herbs, "care being taken not to allow the roots of the hair to enter," though how this latter precaution is possible is not readily conceivable. Dried by the introduction of hot stones, it is then smoked over the cooking-fire, the hair being wrapped in leaves for protection. After three or four months of curing in the smoke, the lips are pierced and the decorations added.

None of these descriptions makes mention of any lashing or means of holding the cranial envelope in position during the curing process. Yet the Murato tsantsa of Colini,¹¹ which is evidently a head obtained before the finishing touches had been added, shows a slender spike of wood passed backward through the nostrils and out through the perforation at the vertex. A cord is lashed around the ends of this stick and over the forehead, thus forcing the nostrils forward and

⁸ Dr. Rivet, *Journ. citu*, t. XIX, p. 71; also Sir John Lubbock, Note on the Macas Indians. *Journal of the Anthropological Institute of Great Britain and Ireland*, vol. III, p. 30. Sir John, however, states that the bones were removed through the neck after the boiling.

⁹ Jorge M. von Hassel, Las Tribus salvajes de la región amazónica del Perú. *Boletín de la Sociedad Geográfica de Lima*, XVII, 1905, pp. 56–57.

¹⁰ Dr. Walter Hough, Prepared Human Head. *American Anthropologist*, vol. XIV, p. 406.

¹¹ Dr. G. A. Colini, *opera citu*, p. 362 et seq., tav. 1, fig. 1; also Dr. Rivet, *Journ. citu*, t. XIX, p. 82, Pl. 1, fig. 3.

upward, and causing the deep bend at the root of the nose, which is characteristic of all genuine tsantsas, and, in the Academy's example, has resulted in an actual breaking of the integument.

The three piercings of the lips are also occupied by skewers lashed in place; another stick is thrust into the auditory meatus and the neck is secured to a wooden ring by stitching.

The lips, then, in this unfinished trophy, are already pierced and held together by skewers, which fix them rigidly in the desired position. Together with the spike through nostril and vertex, they form an essential part of the taxidermy and account for the characteristic protraction of the lips. Certainly in both specimens herein described, the perforations of the lips, like those of the lobules, were accomplished while the flesh was comparatively soft. On the other hand, the stick thrust into the auditory meatus would seem not to have been a constant feature of the preparation, as the small hole made by it is found only occasionally.

Some sort of device must have been in use for keeping open during desiccation the flaccid skin of the neck, and the wooden circle of Colini's tsantsa would have admirably served this purpose. The Academy's specimen shows at the section of the neck certain fine grooves, running from the outer to the inner surface of the flesh, as if it had been traversed by stitches and had later been cut or broken away along the plane of the piercings, leaving the grooves exposed.

It seems to be certain that, whether the preparation occupied one day, one week, or several months, whether it was by means of alternate steaming and drying or by smoking, or by a combination of both methods—as seems probable—the seaming of the scalp, the piercing of the vertex and of the lips, and the insertion of the wand from nostril to vertex must have been done while the flesh had not yet hardened; but, apparently, when the last of these operations took place, the trophy was already reduced practically to its final dimensions and, in the case of the Academy's tsantsa, had lost some of its flexibility.

EXPLANATION OF PLATES VI, VII.

PLATE VI.—Tsantsa, mummified human head, prepared by the Jibaro Indians of Ecuador. A. N. S. P., No. 15,048.

PLATE VII.—Tsantsa: *a*, front view; *b*, lateral view. Owned by Mr. Samuel Castner, Jr.



WARDLE: TSANTSAS.



WARDLE: TSANTSA.